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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/824,965      | 04/03/2001  | Tomohiro Kawase      | 12967-002001        | 5467             |

26211 7590 06/12/2003

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NEW YORK, NY 10111

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| EXAMINER |
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KUNEMUND, ROBERT M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1765

DATE MAILED: 06/12/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                  |
|------------------------------|-------------------------------|------------------|
| <b>Office Action Summary</b> | Application No.               | Applicant(s)     |
|                              | 09/824,965                    | KAWASE ET AL.    |
|                              | Examiner<br>Robert M Kunemund | Art Unit<br>1765 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.  
 If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.  
 If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.  
 Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).  
 Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)  Responsive to communication(s) filed on 9- 11- 2002, 10- 25- 2002, 2- 6- 2003.  
 2a)  This action is **FINAL**.      2b)  This action is non-final.  
 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)  Claim(s) 1-71 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5)  Claim(s) 1-22, 26-29 and 31-39 is/are allowed.  
 6)  Claim(s) 23-25, 30, 40-43, 48-50 and 53-64 is/are rejected.  
 7)  Claim(s) 44-47, 51, 52, 65, 66, 69, and 71 is/are objected to.  
 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9)  The specification is objected to by the Examiner.  
 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.  
 12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a)  All b)  Some \* c)  None of:  
     1.  Certified copies of the priority documents have been received.  
     2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a)  The translation of the foreign language provisional application has been received.  
 15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)      4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)      5)  Notice of Informal Patent Application (PTO-152)  
 3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_      6)  Other: \_\_\_\_\_.

*The Rejections*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23 to 25, 30, 40 to 43, 48 to 50, 53 to 64, 67, 68 and 70 are rejected under 35

U.S.C. 102(b) as being anticipated by Marshall-DeCuir (article).

The Marshall-DeCuir reference teaches the formation of semi-insulating GaAs, which is an III-V compound. In a crucible, a charge of gallium arsenide is placed and melted. The melt is covered with boric oxide in order to prevent arsenic loss. Carbon is also placed in the crucible, prior to melting. The carbon dopes the gallium arsenide melt. From the doped melt a single crystal of gallium arsenide is grown with a specific carbon content. The amount of carbon placed in the crucible prior to melt is larger than the wanted carbon amount in the gallium arsenide. Note, entire reference and specifically the examples and figures.

Claims 44 to 47, 51, 52, 65, 66, 69, 71 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Examiner's Remarks*

Art Unit: 1765

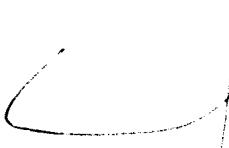
The remaining claims contain allowable subject matter. The Marshall-DeCuir reference is limited solely to czochralski growth. This does not read on the vertical boat method of the claims, as the claims require the crystal to be formed in the boat.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M Kunemund whose telephone number is 703-308-1091. The examiner can normally be reached on 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ben Utech can be reached on 703-308-3636. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

RMK  
April 18, 2003

  
ROBERT KUNEMUND  
PRIMARY EXAMINER